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PAULINELLA CHROMATOPHORA.

WILLIAM A. KEPNER.

In volume 59 of the *Zeitschrift für wissenschaftliche Zoologie* Lauterborn has described an interesting new Sarcodin, which he named *Paulinella chromatophora*. During the months of December, 1894, January and February, 1895, he found and studied 200 individuals whose generic and specific characteristics he gave in the following:

“Genus *Paulinella*. Shell elliptical, sack- or flask-shaped, in transverse section circular, composed of five rows of six-sided, silicious plates, mouth of shell elevated upon a neck, very narrow, in transverse section a lengthened oval. The protoplasmic body does not completely fill the shell cavity; nucleus spherical, rather large, with a reticular structure, situated in the posterior part of the body; contractile vacuole in the anterior third of body. Pseudopodia long and slender, never anastomosing.

“*Paulinella chromatophora*. With the characteristics of the genus. Contains one or mostly two conspicuous sausage-formed chromatophore-like bodies of a blue-green color. The reception of food not observed, nutrition, therefore, apparently holophytic with the aid of the ‘chromatophores.’

“Length of shells: 0.020–0.030 mm., width: 0.015–0.020 mm., diameter of chromatophores: 0.003 mm.

“Habitat: stagnant water of the Rhein near Neuhofen under diatoms in company with *Amæba*, *Diffugia*, *Euglypha*, *Gromia mutabilis* Bail, etc.”

So far as I know this form has not since been discovered. I wish to record it hereby for the United States. The specimens studied met the requirements of Lauterborn’s paper so well that I am not justified in giving the details of the anatomy. For these the reader is referred to Lauterborn’s account.

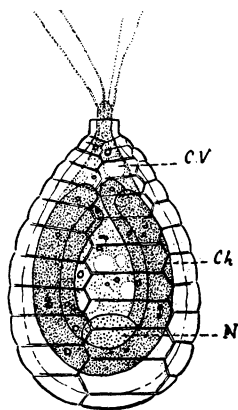
Mr. W. G. Lapham, of this place, discovered and recognized, on November 1, 1904, a single individual of *Paulinella chromatophora* in water taken from an oozy bank near Afton, Va. In December the writer found specimens from a spring-pool at Charlottesville, Va. They are mud-loving creatures and are

found in the sediment upon dead leaves in company with many *Mallomonas Plosslii* Perty, some *Amæba radiosa*, and *Acanthocystis* sp. and an occasional desmid.

The shells in our specimens were somewhat thicker than Lauterborn describes.

The bulk of the protoplasmic body varies, but it never fills completely the shell cavity. In one individual the protoplasmic body was contracted into a sharply defined spherical mass, which lay at the base of the shell cavity. Before pseudopodia appear a rounded neck of protoplasm is extended through the narrow neck of the shell. And then suddenly one or more pseudopodia are thrust out from this protruding bit of protoplasm. For a moment the pseudopodia remain quiescent; but they are usually oscillating or slowly waving like a flagellum. It is strikingly interesting to see these pseudopodia function as primitive flagella.

An isolated individual kept in a moist chamber at living-room temperature from January 5 to January 18 showed on the latter date *two large horse-shoe shaped chromatophores* which lay side by side with their ends directed towards the mouth of the shell. On January 5 this individual had but one horse-shoe shaped chromatophore. The specimen lived in this condition one week longer when it was accidentally killed. It remains to be seen, therefore, whether these two large chromatophores were developed as an effect of the artificial environment, or whether they were a step preparatory to cell-division, or a mere variation which will be more frequently met with when greater numbers are found.



We have not counted the individuals found. They are plentiful and can be found with comparative ease in water from the spring-pool by Preston Heights, Charlottesville, Virginia. We have succeeded in keeping *Paulinella chromatophora* alive in small aquaria and moist chambers at living-room temperature for periods as long as three weeks.